

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claim 1 (original): Optical fiber having a multimode core (10) comprising:

 a first zone (11), which is homogeneous, made of a first material, which has a first refractive index (n_1);

 a second zone (12) made of at least one second material, which has a second refractive index (n_2), which is less than the first index (n_1), that second zone (12) being peripherally arranged with respect to the first zone (11), said first and second zones being configured so that the interface between those zones defines, in a transverse plane, a contour delimiting the first zone (11) which has a star shape such that the multimode transmission characteristics of the fiber are equivalent to those of a graded-index fiber.

Claim 2 (currently amended): Optical fiber according to claim 1, ~~characterized in that~~ wherein the star shape of said contour has N arms and has rotational symmetry of order N.

Claim 3 (currently amended): Optical fiber according to ~~one of claims 1 to 2,~~ claim 1, wherein the star shape of said contour has at least 4 arms.

Claim 4 (currently amended): Optical fiber according to ~~any one of the preceding claims, characterized in that~~ claim 1, wherein the second zone (12) comprises a plurality of materials (21, 22, 23) having different refractive indices.

Claim 5 (currently amended): Optical fiber according to claim 4, ~~characterized in that~~ wherein the different materials of the second zone (12) are concentric.

Claim 6 (currently amended): Optical fiber according to ~~any one of the preceding claims, characterized in that~~ claim 1, wherein it comprises, in addition, a cladding (30) made of a material of the second zone (12) of the multimode core.

Claim 7 (currently amended): Optical fiber according to ~~any one of claims 1 to 6~~ claim 1, characterized in that wherein the material of the first zone (11) of the multimode core comprises glass.

Claim 8 (currently amended): Optical fiber according to ~~any one of claims 1 to 6, characterized in that~~ claim 1, wherein the material of the first zone (11) of the multimode core comprises plastics material.

Claim 9 (currently amended): Optical fiber according to ~~any one of the preceding claims, characterized in that~~ claim 1, wherein the material of the second zone (12) of the multimode core comprises plastics material.

Claim 10 (currently amended): Optical fiber according to ~~any one of claims 1 to 7~~claim 1, ~~characterized in that wherein~~ the material of the second zone (12) of the multimode core comprises glass.

Claim 11 (currently amended): Optical fiber according to ~~claim 7 or 10~~, ~~characterized in that~~claim 7, wherein the glass comprises silica.

Claim 12 (currently amended): Optical fiber according to ~~any one of the preceding claims~~, ~~characterized in that~~claim 1, wherein the material of the first and/or second zone (11, 12) of the multimode core comprises a dopant element.

Claim 13 (currently amended): Optical fiber according to ~~any one of the preceding claims~~, ~~characterized in that~~claim 1, wherein it comprises, in addition, a single-mode core (20), and in that said first zone (11) is located peripherally with respect to that single-mode core (20).

Claim 14 (currently amended): Optical fiber according to claim 13, ~~characterized in that wherein~~ the single-mode core comprises a rare-earth dopant.

Claim 15 (currently amended): Optical fiber according to claim 13, ~~characterized in that wherein~~ the single-mode core is surrounded by a ring comprising a rare-earth dopant.

Claim 16 (currently amended): Optical amplifier which includes an optical fiber
| according to ~~one of claims 13 to 15~~claim 13.

Claim 17 (currently amended): Laser which includes a portion of optical fiber
| according to ~~one of claims 13 to 15~~claim 13.

Claim 18 (currently amended): Local optical network which includes at least one
| optical fiber according to ~~one of claims 1 to 12~~claim 1.